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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/648,760  
Filing Date: August 25, 2003  
Appellant(s): VAN DER LINDEN ET AL.

\_\_\_\_\_  
Erin C. Ming (Reg. No. 47,797)  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 23 January 2008 appealing from the Office action mailed 23 May 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The Examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

However, Appellant has noted in the Appeal Brief of the possible relevance of an appeal concerning U.S. Patent Application Serial No. 10/648,752.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

Kanne, Cad-Christian et al., "Efficient Storage of XML Data," Universitat Mannheim, Germany, June 16, 1999, pp. 1-20.

5,758,361	van Hoff	5-1998
5,673,334	Nichani et al.	9-1997

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1 – 2, 4 – 7, 10 – 15 and 17 – 20, 23 – 32 and 34 – 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanne et al. "Efficient Storage of XML Data," Universitat Mannheim, Germany June 16, 1999 (Hereinafter "Kanne") in view of van Hoff US 5758361.

As per **claim 1**, Kanne teaches, a method for storing a structured document in its native format in a database, the method comprising: receiving a structured document and generating a hierarchical node tree comprising a plurality of nodes (*see tree is generated by xml parser, in section 2.2 and plurality of nodes, in Fig. 3*), wherein the node tree represents the structured document (*see tree which represents the model*

*document, in section 2.1); and storing the plurality of nodes in at least one record in the database (see pages holds one or more records, in section 2.1). Kanne does not disclose that record comprises a node slot array, the node slot array including a plurality of node slots, each node slot including a pointer pointing to one of the plurality of nodes in the hierarchical node tree. Van Hoff discloses array with plurality of slot where each slot includes a pointer corresponds to a node (item #200, which is the data structure, includes the document content array (#202), an Index Offset Array (#210), and a Pointer Array (#206)). Kanne and van Hoff et al. are analogous art because they are from the same field of endeavor of parsing document into tree. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the array with plurality of slot where each slot includes a pointer pointing to a node of Hoff et al. with Kanne because it would help to create hierarchical document tree efficiently (see col. 3 lines 15-40).*

As per **claims 2, 15 and 28**, Kanne also teaches, parsing the structured document into the plurality of nodes (*see XML parser is parsing the document into tree with plurality of nodes, in section 2.2*); linking each of the plurality of nodes via pointers to form the hierarchical node efficiently (*see parent and child are linked with pointer, in Fig. 4*).

As per **claims 4, 17 and 29**, Kanne also teaches, storing the at least one record on at least one page (*see page holds one or more records, in section 2.1*).

As per **claims 5, 18 and 30**, Kanne teaches, a method for storing a structured document in its native format in a database. However, Kanne does not explicitly teach

that each page comprises a plurality of record slots, wherein each record slot includes a pointer pointing to a record stored on the page. Van Hoff teaches each page comprises a plurality of record slots, wherein each record slot includes a pointer pointing to a record stored on the page (*see plurality of array slot and pointer array points to content element, in Fig. 2 item # 206*). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the array slot and pointer array which points to content element of Hoff et al. with Kanne because it would help to create hierarchical document tree efficiently (see col. 3 lines 15-40).

As per **claims 6, 19 and 31**, Kanne also teaches, wherein each node is identified by an identifier comprising a record slot number corresponding to the record slot pointing to the record in which the node resides and a node slot number corresponding to the node slot pointing to the node (*see RID in proxy objects which contains record identification of sub-tree, in section 2.3.3*).

As per **claims 7, 20 and 32**, Kanne teaches, wherein a node comprises a plurality of child pointers if the node has children, wherein each of the plurality of pointers points to a child node (*see plurality of child pointers points to the child, in Fig. 4*).

As per **claims 10, 23 and 34**, as set forth in claim 7, Kanne also disclose that the node further comprises an in-lined character array (*see each node is a part of and array which is described by a pointer, in Fig. 4*).

As per **claims 11, 24 and 35**, as set forth in claim 10, wherein a child pointer describes the child by pointing to the in-lined character array (*see child pointer points to the child node and pointer array describes the child relation, in Fig. 4*).

As per **claims 12, 25 and 37** as set forth in claim 7, Kanne also teaches, wherein a child pointer describes the child and its value (*see child pointer points to the child, in Fig. 4 and see the value of the child in Fig. 15*).

As per **claims 13, 26 and 36**, as set forth in claim 1, Kanne teaches, the structured document is written in Extensible Markup Language (*see XML document, in section 2.2*).

As per **claim 14**, a computer readable medium encoded with a computer program for storing structured document is also rejected as set forth in claim 1.

As per **claim 27**, a system for storing structured document is also rejected as set forth in claim 1.

Claims **8, 9, 21, 22, 33 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanne et al. "Efficient Storage of XML Data," Universitat Mannheim, Germany June 16, 1999 (Hereinafter "Kanne") in view of van Hoff US 5758361 and further in view of Nichani et al. US 5673334.

As per **claims 8, 21 and 33**, Kanne and van Hoff discloses storing structured document in a database. However, neither Kanne nor van Hoff explicitly discloses that a child pointer points to a node slot pointing to the child node if the child node is a separate node. Nichani et al. discloses a child pointer points to a node slot pointing to

the child node if the child node is a separate node (*see Fig. 7*). Kanne, van Hoff and Nichani et al. are analogous art because they are from the same field of endeavor of parsing document into tree. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a child pointer points to a node slot pointing to the child node if the child node is a separate node of Nichani et al. with Kanne and Hoff because it would help to address the respective node of the tree (*see col. 10 lines 12-28*).

As per **claims 9, 22 and 38**, Kanne also teaches, a first record in a first page points to a record slot in a second page and a node slot in a second record if the child node is a separate node stored in the second record on the second page (*see a record has partitioned into several sub-trees section 3 and pointer points to the root of the second page, in Fig. 8 (b) and 8(c)*).

#### **(10) Response to Argument**

##### **1. 35 USC § 103(a): Kanne et al. in view of van Hoff (Claims 1, 14 and 27)**

Appellant argues (see section VII.1, page 5 – 8 of Appellant's Appeal Brief),

Kanne and [van] Hoff do not, alone or in combination, disclose, teach, or suggest "each record comprises a node slot array, the node slot array including a plurality of node slots, each node slot including a pointer pointing to one of the plurality of nodes in the hierarchical node tree."

Kanne provides a method and system for constructing a hierarchal tree node from a structured document such as XML (*section 2.2 of Kanne*). The Appellant argues that "item #202" cannot be construed as the "node slot array". However, the Examiner notes that item #200, which is the data structure, includes the document content array (#202), an Index Offset Array (#210), and a Pointer Array (#206) (*see Figure 2 and col 3, lines*



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41 – 50). This feature teaches that an array of “nodes slots” (e.g. the index/pointer list) can point to another array of “nodes” (#202) of the structured document. While Kanne provides the structured document in hierarchal form, van Hoff clearly teaches the methods and features with those of Kanne needed by a person of ordinary skill in the art to construct this limitation.

The Examiner would like to further note that this limitation describes a “record”. This “record” is nothing more than non-functional descriptive material (in other words, content). The “record” has no functional relationship to the functionality of the Appellant’s claimed invention. Therefore, this limitation should be given little or no patentable weight. Claiming the contents of a “record” does not distinguish the claimed invention over the prior art of record.

With regard to Appellant’s argument that van Hoff is teaching away from using representing a document in a hierarchal tree format, Appellant contends that van Hoff broadly discourages the use of trees. The Examiner disagrees. Van Hoff is discouraging the use of HTML document editors which require the traversal of the entire tree (all leaf items). Kanne (in section 1) states that the system introduced is a “hybrid system” i.e. that has both “flat” areas as well as node-tree structures for storing XML records. Therefore, a person of ordinary skill would not be discouraged from combining Kanne and van Hoff.

As to where van Hoff states “Unlike in conventional data structures representing HTML documents, the HTML document 125 is represented linearly by the data structure 200”, it is noted that according to MPEP 2123 II, “Disclosed examples and preferred

embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments.” Further, in MPEP 2141.02 VI, “the prior art’s mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed,” which indicates that to show that a reference teaches away, there must be a showing that the reference criticizes, discredits, or otherwise discourages the solution claimed. MPEP 2145 D provides more information on teaching away. In summary, Appellant has not made a proper showing of teaching away, at least in this instance, as no evidence has been shown that the solution claimed has been in any way criticized, discredited, or otherwise discouraged.

**2. 35 USC § 103(a): Kanne et al. in view of van Hoff in view of Nichani et al.  
(Claims 1, 14 and 27)**

Appellant argues (see section VII.2, page 8 – 11 of Appellant’s Appeal Brief),

Kanne, [van] Hoff and Nichani do not, alone or in combination, disclose, teach, or suggest “each record comprises a node slot array, the node slot array including a plurality of node slots, each node slot including a pointer pointing to one of the plurality of nodes in the hierarchical node tree.”

As the Examiner did not reject claims 1, 14 and 27 with the Nichani reference, this argument is moot.

**3. 35 USC § 103(a): Kanne et al. in view of van Hoff (Claims 5, 18, and 30)**

Appellant argues (see section VII.3, page 11 – 13 of Appellant’s Appeal Brief),

Kanne and [van] Hoff do not, alone or in combination, disclose, teach, or suggest "each page comprises a plurality of record slots, wherein each record slot includes a pointer pointing to a record stored on the page."

Kanne provides a method and system for constructing a hierarchal tree node from a structured document such as XML (*section 2.2 of Kanne*). The Appellant argues that "item #202" cannot be construed as the "node slot array". However, the Examiner notes that item #200, which is the data structure, includes the document content array (#202), an Index Offset Array (#210), and a Pointer Array (#206) (*see Figure 2 and col 3, lines 41 – 50*). This feature teaches that an array of "nodes slots" (e.g. the index/pointer list) can point to another array of "nodes" (#202) of the structured document. While Kanne provides the structured document in hierarchal form, van Hoff clearly teaches the methods and features with those of Kanne needed by a person of ordinary skill in the art to construct this limitation.

The Examiner notes that Appellant has not, through claim limitations or explicit definitions, limited the possibly of a "record" being equal to a "page". Further, Appellant's claim 5 states "storing the at least one record on at least one page." This further fuels the reasonable interpretation that Appellant intends no distinction between records and pages. Therefore, these two limitations can be rejected as the same.

The Examiner would like to further note that this limitation describes a "page". This "page" is nothing more then non-functional descriptive material (in other words, content). The "page" has no functional relationship to the functionality of the Appellant's claimed invention. Therefore, this limitation should be given little or no

patentable weight. Claiming the contents of a "page" does not distinguish the claimed invention over the prior art of record.

**4. 35 USC § 103(a): Kanne et al. in view of van Hoff in view of Nichani et al.**

**(Claims 5, 18 and 30)**

Appellant argues (see section VII.4, page 13 – 15 of Appellant's Appeal Brief),

Kanne, [van] Hoff and Nichani do not, alone or in combination, disclose, teach, or suggest "each page comprises a plurality of record slots, wherein each record slot includes a pointer pointing to a record stored on the page."

As the Examiner did not reject claims 5, 18 and 30 with the Nichani reference, this argument is moot.

**5. 35 USC § 103(a): Kanne et al. in view of van Hoff in view of Nichani et al.**

**(Claims 8, 21 and 33)**

Appellant argues (see section VII.5, page 15 and 16 of Appellant's Appeal Brief),

Kanne, [van] Hoff and Nichani do not, alone or in combination, disclose, teach, or suggest "a child pointer points to a node slot pointing to the child node if the child node is a separate node."

Nichani et al discloses a "doubly linked list" (see col 10, lines 5 – 11). A doubly linked list teaches how a child (next node in a linked list) can point back to its parent node (the previous node in a linked list). Kanne teaches a tree network with nodes having numerous children. Van Hoff teaches the pointer list pointing to "slots" (see Figure 2 of Van Hoff and the arguments provided in part 1 of this section). Providing a way for traversal of these nodes from a "leaf" or child node allows for a quicker traversal.

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Therefore, Kanne, [van] Hoff and Nichani, in combination, provide all of the methods and features for a person of ordinary skill in the art to place pointers for parent nodes to child nodes and child nodes to parent nodes and therefore, in combination, teach this limitation.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Garrett Smith/  
Garrett Smith  
Patent Examiner  
Art Unit 2168

Conferees:

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